

SEQUENCE LISTING

<110> Reiss, Yuval
 Taglight, Daniel N.
 Alroy, Iris
 Tuvia, Shmuel
 Barr, Haim Michael

<120> CBL-B POLYPEPTIDES, COMPLEXES AND
 RELATED METHODS

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 <213> Homo sapiens

<400> 5

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<212> DNA

<213> Homo sapiens

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Cys Pro Glu Cys Arg Thr Leu Val Gly Ser Gly Val Asp Glu Leu Pro
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Ser Asn Ile Leu Leu Val Arg Leu Leu Asp Gly Ile Lys Gln Arg Pro
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Trp Lys Pro Gly Pro Gly Gly Gly Gly Gly Thr Thr Cys Thr Asn Thr
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Pro Val Arg Gly Ile Pro Gln Leu Pro Cys Ala Lys Ala Leu Tyr Asn
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Tyr Glu Gly Lys Glu Pro Gly Asp Leu Lys Phe Ser Lys Gly Asp Thr
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Ile Ile Leu Arg Arg Gln Val Asp Glu Asn Trp Tyr His Gly Glu Val
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<213> *Drosophila melanogaster*

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<210> 11

<211> 838

<212> PRT

<213> *Drosophila melanogaster*

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Cys Pro Glu Cys Arg Ile Leu Val Ser Cys Lys Ile Asp Glu Leu Pro
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Pro Asn Val Leu Leu Met Arg Ile Leu Glu Gly Met Lys Gln Asn Ala
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 Ser Ala Thr Thr Lys Ser Pro Tyr Cys Thr Arg Glu Ser Arg Phe Arg
 770 775 780
 Cys Ile Val Pro Tyr Pro Pro Asn Ser Asp Ile Glu Leu Glu Leu His
 785 790 795 800
 Leu Gly Asp Ile Ile Tyr Val Gln Arg Lys Gln Lys Asn Gly Trp Tyr
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 35 40

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 Thr Asn Phe Val Gln Ile Ile Lys
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<400> 28

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Arg Arg Val Asp Glu Asn Trp Ala Glu Gly Met Leu Ala Asp Lys Ile
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Gly Ile Phe Pro Ile Ser Tyr Val Glu Phe Asn Ser
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<213> Homo sapiens

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Ser Val Tyr Val Ala Ile Tyr Pro Tyr Thr Pro Arg Lys Glu Asp Glu
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          20          25          30
Asp Gly Trp Phe Lys Gly Thr Ser Met His Thr Ser Lys Ile Gly Val
          35          40          45
Phe Pro Gly Asn Tyr Val Ala Pro Val Thr
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<210> 30

<211> 57

<212> PRT

<213> Homo sapiens

<400> 30

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Glu Arg His Arg Val Val Val Ser Tyr Pro Pro Gln Ser Glu Ala Glu
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Leu Glu Leu Lys Glu Gly Asp Ile Val Phe Val His Lys Lys Arg Glu
          20          25          30
Asp Gly Trp Phe Lys Gly Thr Leu Gln Arg Asn Gly Lys Thr Gly Leu
          35          40          45
Phe Pro Gly Ser Phe Val Glu Asn Ile
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agggttgaac tnganaaaan tattttaaaa cgtttacctc ccttgaactt tgaacctggg 1440
aaagnc 1446

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<210> 44
<211> 1203
<212> DNA
<213> Homo sapiens

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<400> 44
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aggtctcttc caatggtcac cttggaagtg aagaatatga tgttcctccc cggctttctc 120
ctcctcctcc agttaccacc ctctcccta gcataaagtg tactggtcg ttagcaaat 180
ctctttcaga gaaaacaaga gacccagtag aggaagatga tgatgaatac aagattcctt 240
catccacccc tgtttccctg aattcacaa catctcattg tcataatgta aaacctcctg 300

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ttcgggtcttg tgataatggg cactgtatgc tgaatggaac acatgggtcca tcttcagaga 360
agaaatcaaa catccctgac ttaagcatat atttaaaggg tgaagatgct tttgatgccc 420
tccctccatc tctccacact cccccacctc ctgcaaggca tagtctcatt gaacattcaa 480
aacctcctgg ctccagtagc cggccatcct caggacagga tctttttctt cttccttcag 540
atccctttgt tgatctagca agtggccaag ttcctttgcc tcccgcctaga aggttaccag 600
gtgaaaatgt caaaactaac aggacatcac aggactatga tcagcttcct tcatgttcag 660
atgggttcaca ggcaccagcc agacccccta aaccacgacc gcgcaggact gcaccagaaa 720
ttcaccacag aaaaccccat gggcctgagg cggcattgga aaatgtcgat gcaaaaattg 780
caaaactcat gggagagggt tatgcctttg aagaggtgaa gagagcctta gagatagccc 840
agaataatgt cgaagttgcc cggagcatcc tccgagaatt tgccttcctt cctccagtat 900
ccccacgtct aaatctatag cagccagaac tgtagacacc aaaatggaaa gcaatcgatg 960
tattccaaga gtgtggaaat aaagagaact gagatggaat tcaagagaga agtgtctcct 1020
cctcgtgtag cagcttgaga agaggcttgg gagtgcagct tctcaaagaa aaccgatgct 1080
tgctcaggat gtcgacagct gtggcttcct tgtttttgct agccattttt ttaaatacagg 1140
gttgaactgg aaaaaattat ttaaaaacgt ttacctcctt tgaactttga acctgggaaa 1200
ggc                                          1203

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<210> 45
<211> 300
<212> PRT
<213> Homo sapiens

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<400> 45
Met Arg Lys His Arg Arg His Asp Leu Pro Leu Glu Gly Ala Lys Val
 1          5          10          15
Ser Ser Asn Gly His Leu Gly Ser Glu Glu Tyr Asp Val Pro Pro Arg
 20          25          30
Leu Ser Pro Pro Pro Val Thr Thr Leu Leu Pro Ser Ile Lys Cys
 35          40          45
Thr Gly Pro Leu Ala Asn Ser Leu Ser Glu Lys Thr Arg Asp Pro Val
 50          55          60
Glu Glu Asp Asp Asp Glu Tyr Lys Ile Pro Ser Ser His Pro Val Ser
 65          70          75          80
Leu Asn Ser Gln Pro Ser His Cys His Asn Val Lys Pro Pro Val Arg
 85          90          95
Ser Cys Asp Asn Gly His Cys Met Leu Asn Gly Thr His Gly Pro Ser
100          105          110
Ser Glu Lys Lys Ser Asn Ile Pro Asp Leu Ser Ile Tyr Leu Lys Gly
115          120          125
Glu Asp Ala Phe Asp Ala Leu Pro Pro Ser Leu Pro Pro Pro Pro Pro
130          135          140
Pro Ala Arg His Ser Leu Ile Glu His Ser Lys Pro Pro Gly Ser Ser
145          150          155          160
Ser Arg Pro Ser Ser Gly Gln Asp Leu Phe Leu Leu Pro Ser Asp Pro
165          170          175
Phe Val Asp Leu Ala Ser Gly Gln Val Pro Leu Pro Pro Ala Arg Arg
180          185          190
Leu Pro Gly Glu Asn Val Lys Thr Asn Arg Thr Ser Gln Asp Tyr Asp
195          200          205
Gln Leu Pro Ser Cys Ser Asp Gly Ser Gln Ala Pro Ala Arg Pro Pro
210          215          220
Lys Pro Arg Pro Arg Arg Thr Ala Pro Glu Ile His His Arg Lys Pro
225          230          235          240
His Gly Pro Glu Ala Ala Leu Glu Asn Val Asp Ala Lys Ile Ala Lys
245          250          255
Leu Met Gly Glu Gly Tyr Ala Phe Glu Glu Val Lys Arg Ala Leu Glu
260          265          270
Ile Ala Gln Asn Asn Val Glu Val Ala Arg Ser Ile Leu Arg Glu Phe
275          280          285

```

Ala Phe Pro Pro Pro Val Ser Pro Arg Leu Asn Leu
 290 295 300

<210> 46
 <211> 250
 <212> PRT
 <213> Homo sapiens

<400> 46
 Ser Asp Pro Val Leu Met Arg Lys His Arg Arg His Asp Leu Pro Leu
 1 5 10 15
 Glu Gly Ala Lys Val Ser Ser Asn Gly His Leu Gly Ser Glu Glu Tyr
 20 25 30
 Asp Val Pro Pro Arg Leu Ser Pro Pro Pro Val Thr Thr Leu Leu
 35 40 45
 Pro Ser Ile Lys Cys Thr Gly Pro Leu Ala Asn Ser Leu Ser Glu Lys
 50 55 60
 Thr Arg Asp Pro Val Glu Glu Asp Asp Asp Glu Tyr Lys Ile Pro Ser
 65 70 75 80
 Ser His Pro Val Ser Leu Asn Ser Gln Pro Ser His Cys His Asn Val
 85 90 95
 Lys Pro Pro Val Arg Ser Cys Asp Asn Gly His Cys Met Leu Asn Gly
 100 105 110
 Thr His Gly Pro Ser Ser Glu Lys Lys Ser Asn Ile Pro Asp Leu Ser
 115 120 125
 Ile Tyr Leu Lys Gly Glu Asp Ala Phe Asp Ala Leu Pro Pro Ser Leu
 130 135 140
 Pro Pro Pro Pro Pro Ala Arg His Ser Leu Ile Glu His Ser Lys
 145 150 155 160
 Pro Pro Gly Ser Ser Arg Pro Ser Ser Gly Gln Asp Leu Phe Leu
 165 170 175
 Leu Pro Ser Asp Pro Phe Val Asp Leu Ala Ser Gly Gln Val Pro Leu
 180 185 190
 Pro Pro Ala Arg Arg Leu Pro Gly Glu Asn Val Lys Thr Asn Arg Thr
 195 200 205
 Ser Gln Asp Tyr Asp Gln Leu Pro Ser Cys Ser Asp Gly Ser Gln Ala
 210 215 220
 Pro Ala Arg Pro Pro Lys Pro Arg Pro Arg Arg Thr Ala Pro Glu Ile
 225 230 235 240
 His His Arg Lys Pro His Gly Pro Glu Ala
 245 250

<210> 47
 <211> 770
 <212> PRT
 <213> Homo sapiens

<400> 47
 Met Ala Asn Ser Met Asn Gly Arg Asn Pro Gly Gly Arg Gly Gly Asn
 1 5 10 15
 Pro Arg Lys Gly Arg Ile Leu Gly Ile Ile Asp Ala Ile Gln Asp Ala
 20 25 30
 Val Gly Pro Pro Lys Gln Ala Ala Asp Arg Arg Thr Val Glu Lys
 35 40 45
 Thr Trp Lys Leu Met Asp Lys Val Val Arg Leu Cys Gln Asn Pro Lys
 50 55 60

Leu	Gln	Leu	Lys	Asn	Ser	Pro	Pro	Tyr	Ile	Leu	Asp	Ile	Leu	Pro	Asp	65	70	75	80
Thr	Tyr	Gln	His	Leu	Arg	Leu	Ile	Leu	Ser	Lys	Tyr	Asp	Asp	Asn	Gln				
				85					90					95					
Lys	Leu	Ala	Gln	Leu	Ser	Glu	Asn	Glu	Tyr	Phe	Lys	Ile	Tyr	Ile	Asp				
			100					105					110						
Ser	Leu	Met	Lys	Lys	Ser	Lys	Arg	Ala	Ile	Arg	Leu	Phe	Lys	Glu	Gly				
		115					120					125							
Lys	Glu	Arg	Met	Tyr	Glu	Glu	Gln	Ser	Gln	Asp	Arg	Arg	Asn	Leu	Thr				
			130				135					140							
Lys	Leu	Ser	Leu	Ile	Phe	Ser	His	Met	Leu	Ala	Glu	Ile	Lys	Ala	Ile				
					150					155					160				
Phe	Pro	Asn	Gly	Gln	Phe	Gln	Gly	Asp	Asn	Phe	Arg	Ile	Thr	Lys	Ala				
				165					170					175					
Asp	Ala	Ala	Glu	Phe	Trp	Arg	Lys	Phe	Phe	Gly	Asp	Lys	Thr	Ile	Val				
			180					185					190						
Pro	Trp	Lys	Val	Phe	Arg	Gln	Cys	Leu	His	Glu	Val	His	Gln	Ile	Ser				
			195				200						205						
Ser	Ser	Leu	Glu	Ala	Met	Ala	Leu	Lys	Ser	Thr	Ile	Asp	Leu	Thr	Cys				
						215						220							
Asn	Asp	Tyr	Ile	Ser	Val	Phe	Glu	Phe	Asp	Ile	Phe	Thr	Arg	Leu	Phe				
					230					235					240				
Gln	Pro	Trp	Gly	Ser	Ile	Leu	Arg	Asn	Trp	Asn	Phe	Leu	Ala	Val	Thr				
				245					250					255					
His	Pro	Gly	Tyr	Met	Ala	Phe	Leu	Thr	Tyr	Asp	Glu	Val	Lys	Ala	Arg				
			260					265					270						
Leu	Gln	Lys	Tyr	Ser	Thr	Lys	Pro	Gly	Ser	Tyr	Ile	Phe	Arg	Leu	Ser				
			275				280					285							
Cys	Thr	Arg	Leu	Gly	Gln	Trp	Ala	Ile	Gly	Tyr	Val	Thr	Gly	Asp	Gly				
			290			295					300								
Asn	Ile	Leu	Gln	Thr	Ile	Pro	His	Asn	Lys	Pro	Leu	Phe	Gln	Ala	Leu				
					310					315					320				
Ile	Asp	Gly	Ser	Arg	Glu	Gly	Phe	Tyr	Leu	Tyr	Pro	Asp	Gly	Arg	Ser				
				325					330					335					
Tyr	Asn	Pro	Asp	Leu	Thr	Gly	Leu	Cys	Glu	Pro	Thr	Pro	His	Asp	His				
			340					345					350						
Ile	Lys	Val	Thr	Gln	Glu	Gln	Tyr	Glu	Leu	Tyr	Cys	Glu	Met	Gly	Ser				
			355				360					365							
Thr	Phe	Gln	Leu	Cys	Lys	Ile	Cys	Ala	Glu	Asn	Asp	Lys	Asp	Val	Lys				
			370				375				380								
Ile	Glu	Pro	Cys	Gly	His	Leu	Met	Cys	Thr	Ser	Cys	Leu	Thr	Ala	Trp				
					390					395					400				
Gln	Glu	Ser	Asp	Gly	Gln	Gly	Cys	Pro	Phe	Cys	Arg	Cys	Glu	Ile	Lys				
				405					410					415					
Gly	Thr	Glu	Pro	Ile	Ile	Val	Asp	Pro	Phe	Asp	Pro	Arg	Asp	Glu	Gly				
			420					425					430						
Ser	Arg	Cys	Cys	Ser	Ile	Ile	Asp	Pro	Phe	Gly	Met	Pro	Met	Leu	Asp				
			435				440					445							
Leu	Asp	Asp	Asp	Asp	Asp	Arg	Glu	Glu	Ser	Leu	Met	Met	Asn	Arg	Leu				
						455					460								
Ala	Asn	Val	Arg	Lys	Cys	Thr	Asp	Arg	Gln	Asn	Ser	Pro	Val	Thr	Ser				
					470					475					480				
Pro	Gly	Ser	Ser	Pro	Leu	Ala	Gln	Arg	Arg	Lys	Pro	Gln	Pro	Asp	Pro				
				485					490					495					
Leu	Gln	Ile	Pro	His	Leu	Ser	Leu	Pro	Pro	Val	Pro	Pro	Arg	Leu	Asp				
			500					505					510						
Leu	Ile	Gln	Lys	Gly	Ile	Val	Arg	Ser	Pro	Cys	Gly	Ser	Pro	Thr	Gly				
			515				520					525							

Ser Pro Lys Ser Ser Pro Cys Met Val Arg Lys Gln Asp Lys Pro Leu
 530 535 540
 Pro Ala Pro Pro Pro Pro Leu Arg Asp Pro Pro Pro Pro Pro Glu
 545 550 555 560
 Arg Pro Pro Pro Ile Pro Pro Asp Asn Arg Leu Ser Arg His Ile His
 565 570 575
 His Val Glu Ser Val Pro Ser Arg Asp Pro Pro Met Pro Leu Glu Ala
 580 585 590
 Trp Cys Pro Arg Asp Val Phe Gly Thr Asn Gln Leu Val Gly Cys Arg
 595 600 605
 Leu Leu Gly Glu Gly Ser Pro Lys Pro Gly Ile Thr Ala Ser Ser Asn
 610 615 620
 Val Asn Gly Arg His Ser Arg Val Gly Ser Asp Pro Val Leu Met Arg
 625 630 635 640
 Lys His Arg Arg His Asp Leu Pro Leu Glu Gly Ala Lys Val Phe Ser
 645 650 655
 Asn Gly His Leu Gly Ser Glu Glu Tyr Asp Val Pro Pro Arg Leu Ser
 660 665 670
 Pro Pro Pro Pro Val Thr Thr Leu Leu Pro Ser Ile Lys Cys Thr Gly
 675 680 685
 Pro Leu Ala Asn Ser Leu Ser Glu Lys Thr Arg Asp Pro Val Glu Glu
 690 695 700
 Asp Asp Asp Glu Tyr Lys Ile Pro Ser Ser His Pro Val Ser Leu Asn
 705 710 715 720
 Ser Gln Pro Ser His Cys His Asn Val Lys Pro Pro Val Arg Ser Cys
 725 730 735
 Asp Asn Gly His Cys Met Leu Asn Gly Thr His Gly Pro Ser Ser Glu
 740 745 750
 Lys Lys Ser Asn Ile Pro Asp Leu Ser Ile Tyr Leu Lys Gly Thr Tyr
 755 760 765
 Arg Ile
 770

<210> 48
 <211> 982
 <212> PRT
 <213> Homo sapiens

<400> 48
 Met Ala Asn Ser Met Asn Gly Arg Asn Pro Gly Gly Arg Gly Gly Asn
 1 5 10 15
 Pro Arg Lys Gly Arg Ile Leu Gly Ile Ile Asp Ala Ile Gln Asp Ala
 20 25 30
 Val Gly Pro Pro Lys Gln Ala Ala Asp Arg Arg Thr Val Glu Lys
 35 40 45
 Thr Trp Lys Leu Met Asp Lys Val Val Arg Leu Cys Gln Asn Pro Lys
 50 55 60
 Leu Gln Leu Lys Asn Ser Pro Pro Tyr Ile Leu Asp Ile Leu Pro Asp
 65 70 75 80
 Thr Tyr Gln His Leu Arg Leu Ile Leu Ser Lys Tyr Asp Asp Asn Gln
 85 90 95
 Lys Leu Ala Gln Leu Ser Glu Asn Glu Tyr Phe Lys Ile Tyr Ile Asp
 100 105 110
 Ser Leu Met Lys Lys Ser Lys Arg Ala Ile Arg Leu Phe Lys Glu Gly
 115 120 125
 Lys Glu Arg Met Tyr Glu Glu Gln Ser Gln Asp Arg Arg Asn Leu Thr
 130 135 140

Lys	Leu	Ser	Leu	Ile	Phe	Ser	His	Met	Leu	Ala	Glu	Ile	Lys	Ala	Ile
145					150					155					160
Phe	Pro	Asn	Gly	Gln	Phe	Gln	Gly	Asp	Asn	Phe	Arg	Ile	Thr	Lys	Ala
			165						170					175	
Asp	Ala	Ala	Glu	Phe	Trp	Arg	Lys	Phe	Phe	Gly	Asp	Lys	Thr	Ile	Val
			180					185					190		
Pro	Trp	Lys	Val	Phe	Arg	Gln	Cys	Leu	His	Glu	Val	His	Gln	Ile	Ser
		195					200					205			
Ser	Gly	Leu	Glu	Ala	Met	Ala	Leu	Lys	Ser	Thr	Ile	Asp	Leu	Thr	Cys
	210					215					220				
Asn	Asp	Tyr	Ile	Ser	Val	Phe	Glu	Phe	Asp	Ile	Phe	Thr	Arg	Leu	Phe
225					230					235					240
Gln	Pro	Trp	Gly	Ser	Ile	Leu	Arg	Asn	Trp	Asn	Phe	Leu	Ala	Val	Thr
			245					250						255	
His	Pro	Gly	Tyr	Met	Ala	Phe	Leu	Thr	Tyr	Asp	Glu	Val	Lys	Ala	Arg
			260					265					270		
Leu	Gln	Lys	Tyr	Ser	Thr	Lys	Pro	Gly	Ser	Tyr	Ile	Phe	Arg	Leu	Ser
		275					280					285			
Cys	Thr	Arg	Leu	Gly	Gln	Trp	Ala	Ile	Gly	Tyr	Val	Thr	Gly	Asp	Gly
	290				295						300				
Asn	Ile	Leu	Gln	Thr	Ile	Pro	His	Asn	Lys	Pro	Leu	Phe	Gln	Ala	Leu
305					310					315					320
Ile	Asp	Gly	Ser	Arg	Glu	Gly	Phe	Tyr	Leu	Tyr	Pro	Asp	Gly	Arg	Ser
			325					330						335	
Tyr	Asn	Pro	Asp	Leu	Thr	Gly	Leu	Cys	Glu	Pro	Thr	Pro	His	Asp	His
			340					345					350		
Ile	Lys	Val	Thr	Gln	Glu	Gln	Tyr	Glu	Leu	Tyr	Cys	Glu	Met	Gly	Ser
		355					360					365			
Thr	Phe	Gln	Leu	Cys	Lys	Ile	Cys	Ala	Glu	Asn	Asp	Lys	Asp	Val	Lys
	370					375					380				
Ile	Glu	Pro	Cys	Gly	His	Leu	Met	Cys	Thr	Ser	Cys	Leu	Thr	Ala	Trp
385					390					395					400
Gln	Glu	Ser	Asp	Gly	Gln	Gly	Cys	Pro	Phe	Cys	Arg	Cys	Glu	Ile	Lys
			405						410					415	
Gly	Thr	Glu	Pro	Ile	Ile	Val	Asp	Pro	Phe	Asp	Pro	Arg	Asp	Glu	Gly
			420					425					430		
Ser	Arg	Cys	Cys	Ser	Ile	Ile	Asp	Pro	Phe	Gly	Met	Pro	Met	Leu	Asp
		435					440					445			
Leu	Asp	Asp	Asp	Asp	Asp	Arg	Glu	Glu	Ser	Leu	Met	Met	Asn	Arg	Leu
	450					455					460				
Ala	Asn	Val	Arg	Lys	Cys	Thr	Asp	Arg	Gln	Asn	Ser	Pro	Val	Thr	Ser
465					470					475					480
Pro	Gly	Ser	Ser	Pro	Leu	Ala	Gln	Arg	Arg	Lys	Pro	Gln	Pro	Asp	Pro
				485					490					495	
Leu	Gln	Ile	Pro	His	Leu	Ser	Leu	Pro	Val	Pro	Pro	Arg	Pro	Leu	Asp
			500					505					510		
Leu	Ile	Gln	Lys	Gly	Ile	Val	Arg	Ser	Pro	Cys	Gly	Ser	Pro	Thr	Gly
		515					520					525			
Ser	Pro	Lys	Ser	Ser	Pro	Cys	Met	Val	Arg	Lys	Gln	Asp	Lys	Pro	Leu
	530					535					540				
Pro	Ala	Pro	Pro	Pro	Pro	Leu	Arg	Asp	Pro	Pro	Pro	Pro	Pro	Pro	Glu
545					550					555					560
Arg	Pro	Pro	Pro	Ile	Pro	Pro	Asp	Asn	Arg	Leu	Ser	Arg	His	Ile	His
				565					570					575	
His	Val	Glu	Ser	Val	Pro	Ser	Lys	Asp	Pro	Pro	Met	Pro	Leu	Glu	Ala
			580					585					590		
Trp	Cys	Pro	Arg	Asp	Val	Phe	Gly	Thr	Asn	Gln	Leu	Val	Gly	Cys	Arg
		595					600					605			

Leu Leu Gly Glu Gly Ser Pro Lys Pro Gly Ile Thr Ala Ser Ser Asn
 610 615 620
 Val Asn Gly Arg His Ser Arg Val Gly Ser Asp Pro Val Leu Met Arg
 625 630 635 640
 Lys His Arg Arg His Asp Leu Pro Leu Glu Gly Ala Lys Val Phe Ser
 645 650 655
 Asn Gly His Leu Gly Ser Glu Glu Tyr Asp Val Pro Pro Arg Leu Ser
 660 665 670
 Pro Pro Pro Pro Val Thr Thr Leu Leu Pro Ser Ile Lys Cys Thr Gly
 675 680 685
 Pro Leu Ala Asn Ser Leu Ser Glu Lys Thr Arg Asp Pro Val Glu Glu
 690 695 700
 Asp Asp Asp Glu Tyr Lys Ile Pro Ser Ser His Pro Val Ser Leu Asn
 705 710 715 720
 Ser Gln Pro Ser His Cys His Asn Val Lys Pro Pro Val Arg Ser Cys
 725 730 735
 Asp Asn Gly His Cys Met Leu Asn Gly Thr His Gly Pro Ser Ser Glu
 740 745 750
 Lys Lys Ser Asn Ile Pro Asp Leu Ser Ile Tyr Leu Lys Gly Asp Val
 755 760 765
 Phe Asp Ser Ala Ser Asp Pro Val Pro Leu Pro Pro Ala Arg Pro Pro
 770 775 780
 Thr Arg Asp Asn Pro Lys His Gly Ser Ser Leu Asn Arg Thr Pro Ser
 785 790 795 800
 Asp Tyr Asp Leu Leu Ile Pro Pro Leu Gly Glu Asp Ala Phe Asp Ala
 805 810 815
 Leu Pro Pro Ser Leu Pro Pro Pro Pro Pro Ala Arg His Ser Leu
 820 825 830
 Ile Glu His Ser Lys Pro Pro Gly Ser Ser Ser Arg Pro Ser Ser Gly
 835 840 845
 Gln Asp Leu Phe Leu Leu Pro Ser Asp Pro Phe Val Asp Leu Ala Ser
 850 855 860
 Gly Gln Val Pro Leu Pro Pro Ala Arg Arg Leu Pro Gly Glu Asn Val
 865 870 875 880
 Lys Thr Asn Arg Thr Ser Gln Asp Tyr Asp Gln Leu Pro Ser Cys Ser
 885 890 895
 Asp Gly Ser Gln Ala Pro Ala Arg Pro Pro Lys Pro Arg Pro Arg Arg
 900 905 910
 Thr Ala Pro Glu Ile His His Arg Lys Pro His Gly Pro Glu Ala Ala
 915 920 925
 Leu Glu Asn Val Asp Ala Lys Ile Ala Lys Leu Met Gly Glu Gly Tyr
 930 935 940
 Ala Phe Glu Glu Val Lys Arg Ala Leu Glu Ile Ala Gln Asn Asn Val
 945 950 955 960
 Glu Val Ala Arg Ser Ile Leu Arg Glu Phe Ala Phe Pro Pro Pro Val
 965 970 975
 Ser Pro Arg Leu Asn Leu
 980

<210> 49
 <211> 982
 <212> PRT
 <213> Homo sapiens

<400> 49
 Met Ala Asn Ser Met Asn Gly Arg Asn Pro Gly Gly Arg Gly Gly Asn
 1 5 10 15

Pro	Arg	Lys	Gly	Arg	Ile	Leu	Gly	Ile	Ile	Asp	Ala	Ile	Gln	Asp	Ala		
			20					25					30				
Val	Gly	Pro	Pro	Lys	Gln	Ala	Ala	Ala	Asp	Arg	Arg	Thr	Val	Glu	Lys		
		35					40					45					
Thr	Trp	Lys	Leu	Met	Asp	Lys	Val	Val	Arg	Leu	Cys	Gln	Asn	Pro	Lys		
	50					55					60						
Leu	Gln	Leu	Lys	Asn	Ser	Pro	Pro	Tyr	Ile	Leu	Asp	Ile	Leu	Pro	Asp		
65				70						75					80		
Thr	Tyr	Gln	His	Leu	Arg	Leu	Ile	Leu	Ser	Lys	Tyr	Asp	Asp	Asn	Gln		
				85					90					95			
Lys	Leu	Ala	Gln	Leu	Ser	Glu	Asn	Glu	Tyr	Phe	Lys	Ile	Tyr	Ile	Asp		
			100					105					110				
Ser	Leu	Met	Lys	Lys	Ser	Lys	Arg	Ala	Ile	Arg	Leu	Phe	Lys	Glu	Gly		
		115					120					125					
Lys	Glu	Arg	Met	Tyr	Glu	Glu	Gln	Ser	Gln	Asp	Arg	Arg	Asn	Leu	Thr		
	130					135					140						
Lys	Leu	Ser	Leu	Ile	Phe	Ser	His	Met	Leu	Ala	Glu	Ile	Lys	Ala	Ile		
145					150					155					160		
Phe	Pro	Asn	Gly	Gln	Phe	Gln	Gly	Asp	Asn	Phe	Arg	Ile	Thr	Lys	Ala		
				165				170						175			
Asp	Ala	Ala	Glu	Phe	Trp	Arg	Lys	Phe	Phe	Gly	Asp	Lys	Thr	Ile	Val		
			180					185					190				
Pro	Trp	Lys	Val	Phe	Arg	Gln	Cys	Leu	His	Glu	Val	His	Gln	Ile	Ser		
		195					200					205					
Ser	Ser	Leu	Glu	Ala	Met	Ala	Leu	Lys	Ser	Thr	Ile	Asp	Leu	Thr	Cys		
	210					215					220						
Asn	Asp	Tyr	Ile	Ser	Val	Phe	Glu	Phe	Asp	Ile	Phe	Thr	Arg	Leu	Phe		
225					230				235						240		
Gln	Pro	Trp	Gly	Ser	Ile	Leu	Arg	Asn	Trp	Asn	Phe	Leu	Ala	Val	Thr		
				245					250					255			
His	Pro	Gly	Tyr	Met	Ala	Phe	Leu	Thr	Tyr	Asp	Glu	Val	Lys	Ala	Arg		
			260					265					270				
Leu	Gln	Lys	Tyr	Ser	Thr	Lys	Pro	Gly	Ser	Tyr	Ile	Phe	Arg	Leu	Ser		
		275					280					285					
Cys	Thr	Arg	Leu	Gly	Gln	Trp	Ala	Ile	Gly	Tyr	Val	Thr	Gly	Asp	Gly		
	290					295					300						
Asn	Ile	Leu	Gln	Thr	Ile	Pro	His	Asn	Lys	Pro	Leu	Phe	Gln	Ala	Leu		
305					310					315					320		
Ile	Asp	Gly	Ser	Arg	Glu	Gly	Phe	Tyr	Leu	Tyr	Pro	Asp	Gly	Arg	Ser		
				325					330					335			
Tyr	Asn	Pro	Asp	Leu	Thr	Gly	Leu	Cys	Glu	Pro	Thr	Pro	His	Asp	His		
			340					345					350				
Ile	Lys	Val	Thr	Gln	Glu	Gln	Tyr	Glu	Leu	Tyr	Cys	Glu	Met	Gly	Ser		
		355					360					365					
Thr	Phe	Gln	Leu	Cys	Lys	Ile	Cys	Ala	Glu	Asn	Asp	Lys	Asp	Val	Lys		
	370					375					380						
Ile	Glu	Pro	Cys	Gly	His	Leu	Met	Cys	Thr	Ser	Cys	Leu	Thr	Ala	Trp		
385					390					395					400		
Gln	Glu	Ser	Asp	Gly	Gln	Gly	Cys	Pro	Phe	Cys	Arg	Cys	Glu	Ile	Lys		
			405						410					415			
Gly	Thr	Glu	Pro	Ile	Ile	Val	Asp	Pro	Phe	Asp	Pro	Arg	Asp	Glu	Gly		
			420					425					430				
Ser	Arg	Cys	Cys	Ser	Ile	Ile	Asp	Pro	Phe	Gly	Met	Pro	Met	Leu	Asp		
		435					440					445					
Leu	Asp	Asp	Asp	Asp	Asp	Arg	Glu	Glu	Ser	Leu	Met	Met	Asn	Arg	Leu		
	450					455					460						
Ala	Asn	Val	Arg	Lys	Cys	Thr	Asp	Arg	Gln	Asn	Ser	Pro	Val	Thr	Ser		
465					470					475					480		

Pro	Gly	Ser	Ser	Pro	Leu	Ala	Gln	Arg	Arg	Lys	Pro	Gln	Pro	Asp	Pro
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 Asp Ala Ala Glu Phe Trp Arg Lys Phe Phe Gly Asp Lys Thr Ile Val
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 Cys Thr Arg Leu Gly Gln Trp Ala Ile Gly Tyr Val Thr Gly Asp Gly
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 <213> *C. elegans*

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 <212> PRT
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 35 40 45
 Thr Trp Lys Leu Met Asp Lys Val Val Arg Leu Cys Gln Asn Pro Lys
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Leu	Gln	Leu	Lys	Asn	Ser	Pro	Pro	Tyr	Ile	Leu	Asp	Ile	Leu	Pro	Asp	65	70	75	80
Thr	Tyr	Gln	His	Leu	Arg	Leu	Ile	Leu	Ser	Lys	Tyr	Asp	Asp	Asn	Gln		85	90	95
Lys	Leu	Ala	Gln	Leu	Ser	Glu	Asn	Glu	Tyr	Phe	Lys	Ile	Tyr	Ile	Asp		100	105	110
Ser	Leu	Met	Lys	Lys	Ser	Lys	Arg	Ala	Ile	Arg	Leu	Phe	Lys	Glu	Gly		115	120	125
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Lys	Leu	Ser	Leu	Ile	Phe	Ser	His	Met	Leu	Ala	Glu	Ile	Lys	Ala	Ile		145	150	155
Phe	Pro	Asn	Gly	Gln	Phe	Gln	Gly	Asp	Asn	Phe	Arg	Ile	Thr	Lys	Ala		165	170	175
Asp	Ala	Ala	Glu	Phe	Trp	Arg	Lys	Phe	Phe	Gly	Asp	Lys	Thr	Ile	Val		180	185	190
Pro	Trp	Lys	Val	Phe	Arg	Gln	Cys	Leu	His	Glu	Val	His	Gln	Ile	Ser		195	200	205
Ser	Gly	Leu	Glu	Ala	Met	Ala	Leu	Lys	Ser	Thr	Ile	Asp	Leu	Thr	Cys		210	215	220
Asn	Asp	Tyr	Ile	Ser	Val	Phe	Glu	Phe	Asp	Ile	Phe	Thr	Arg	Leu	Phe		225	230	235
Gln	Pro	Trp	Gly	Ser	Ile	Leu	Arg	Asn	Trp	Asn	Phe	Leu	Ala	Val	Thr		245	250	255
His	Pro	Gly	Tyr	Met	Ala	Phe	Leu	Thr	Tyr	Asp	Glu	Val	Lys	Ala	Arg		260	265	270
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Cys	Thr	Arg	Leu	Gly	Gln	Trp	Ala	Ile	Gly	Tyr	Val	Thr	Gly	Asp	Gly		290	295	300
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Gln	Glu	Ser	Asp	Gly	Gln	Gly	Cys	Pro	Phe	Cys	Arg	Cys	Glu	Ile	Lys		405	410	415
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Ser	Arg	Cys	Cys	Ser	Ile	Ile	Asp	Pro	Phe	Ser	Ile	Pro	Met	Leu	Asp		435	440	445
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Ala	Ser	Val	Arg	Lys	Cys	Thr	Asp	Arg	Gln	Asn	Ser	Pro	Val	Thr	Ser		465	470	475
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Leu	Gln	Ile	Pro	His	Leu	Ser	Leu	Pro	Pro	Val	Pro	Pro	Arg	Leu	Asp		500	505	510
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820                               825          830
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Gly  Glu  Gly  Tyr  Ala  Phe  Glu  Glu  Val  Lys  Arg  Ala  Leu  Glu  Ile  Ala
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<213> Mus musculus

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Ile	Phe	Thr	Arg	Leu	Phe	Gln	Pro	Trp	Ser	Ser	Leu	Leu	Arg	Asn	Trp
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Ser	Cys	Leu	Thr	Ser	Trp	Gln	Glu	Ser	Glu	Gly	Gln	Gly	Cys	Pro	Phe
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Asp	Pro	Arg	Gly	Ser	Gly	Ser	Leu	Leu	Arg	Gln	Gly	Ala	Glu	Gly	Ala
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<400> 57

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Lys	Leu	Met	Asp	Lys	Val	Val	Lys	Leu	Cys	Gln	Gln	Pro	Lys	Met	Asn
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Gln	Arg	Leu	Arg	Leu	Ile	Tyr	Ser	Lys	Lys	Glu	Asp	Gln	Met	His	Leu
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Leu	His	Ala	Asn	Glu	His	Phe	Asn	Val	Phe	Ile	Asn	Asn	Leu	Met	Arg
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Lys	Cys	Lys	Arg	Ala	Ile	Lys	Leu	Phe	Lys	Glu	Gly	Lys	Glu	Lys	Met
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Phe	Asp	Glu	Asn	Ser	His	Tyr	Arg	Arg	Asn	Leu	Thr	Lys	Leu	Ser	Leu
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Val	Phe	Ser	His	Met	Leu	Ser	Glu	Leu	Lys	Ala	Ile	Phe	Pro	Asn	Gly
145					150					155					160
Val	Phe	Ala	Gly	Asp	Gln	Phe	Arg	Ile	Thr	Lys	Ala	Asp	Ala	Ala	Asp
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Phe	Trp	Lys	Ser	Asn	Phe	Gly	Asn	Ser	Thr	Leu	Val	Pro	Trp	Lys	Ile
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Thr	Leu	Leu	Arg	Asn	Trp	Gln	Ile	Leu	Ala	Val	Thr	His	Pro	Gly	Tyr
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Val	Ala	Phe	Leu	Thr	Tyr	Asp	Glu	Val	Lys	Ala	Arg	Leu	Gln	Arg	Tyr
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Ile	Leu	Lys	Ala	Gly	Ser	Tyr	Val	Phe	Arg	Leu	Ser	Cys	Thr	Arg	Leu
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Thr	Ile	Pro	Gln	Asn	Lys	Ser	Leu	Cys	Gln	Ala	Leu	Leu	Asp	Gly	His
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Arg	Glu	Gly	Phe	Tyr	Leu	Tyr	Pro	Asp	Gly	Gln	Ala	Tyr	Asn	Pro	Asp
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Leu	Ser	Ser	Ala	Val	Gln	Ser	Pro	Thr	Glu	Asp	His	Ile	Thr	Val	Thr
			340					345					350		
Gln	Glu	Gln	Tyr	Glu	Leu	Tyr	Cys	Glu	Met	Gly	Ser	Thr	Phe	Gln	Leu
		355					360					365			
Cys	Lys	Ile	Cys	Ala	Glu	Asn	Asp	Lys	Asp	Ile	Arg	Ile	Glu	Pro	Cys
	370					375					380				
Gly	His	Leu	Leu	Cys	Thr	Pro	Cys	Leu	Thr	Ser	Trp	Gln	Val	Asp	Ser
385					390					395					400
Glu	Gly	Gln	Gly	Cys	Pro	Phe	Cys	Arg	Ala	Glu	Ile	Lys	Gly	Thr	Glu
				405					410					415	

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 35 40 45
 Phe Glu Ile Pro Ser Ala Ser Glu Met Pro Gly Phe Cys Ser Glu Glu
 50 55 60
 Asp Arg Arg Phe Leu Leu Lys Ala Cys Lys Phe Met Asp Gln Val Val
 65 70 75 80
 Lys Ser Cys His Ser Pro Arg Leu Asn Leu Lys Asn Ser Pro Pro Phe
 85 90 95
 Ile Leu Asp Ile Leu Pro Asp Thr Tyr Thr His Leu Met Leu Ile Phe
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 Thr Gln Asn Asn Asp Ile Leu Gln Asp Asn Asp Tyr Leu Lys Ile Phe
 115 120 125
 Leu Glu Ser Met Ile Asn Lys Cys Lys Glu Ile Ile Lys Leu Phe Lys
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 Thr Ser Ala Ile Tyr Asn Asp Gln Ser Glu Glu Arg Arg Lys Leu Thr
 145 150 155 160
 Lys Met Ser Leu Thr Phe Ser His Met Leu Phe Glu Ile Lys Ala Leu
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 Phe Pro Glu Gly Ile Tyr Ile Glu Asp Arg Phe Arg Met Thr Lys Lys
 180 185 190
 Glu Ala Glu Ser Phe Trp Ser His His Phe Thr Lys Lys Asn Ile Val
 195 200 205
 Pro Trp Ser Thr Phe Phe Thr Ala Leu Glu Lys His His Gly Ser Thr
 210 215 220
 Ile Gly Lys Met Glu Ala Ala Glu Leu Lys Ala Thr Ile Asp Leu Ser
 225 230 235 240
 Gly Asp Asp Phe Ile Ser Asn Phe Glu Phe Asp Val Phe Thr Arg Leu
 245 250 255
 Phe Tyr Pro Phe Lys Thr Leu Ile Lys Asn Trp Gln Thr Leu Thr Thr
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 Ala His Pro Gly Tyr Cys Ala Phe Leu Thr Tyr Asp Glu Val Lys Lys
 275 280 285
 Arg Leu Glu Lys Leu Thr Lys Lys Pro Gly Ser Tyr Ile Phe Arg Leu
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 Ser Cys Thr Arg Pro Gly Gln Trp Ala Ile Gly Tyr Val Ala Pro Asp
 305 310 315 320
 Gly Lys Ile Tyr Gln Thr Ile Pro Gln Asn Lys Ser Leu Ile Gln Ala
 325 330 335
 Leu His Glu Gly His Lys Glu Gly Phe Tyr Ile Tyr Pro Asn Gly Arg
 340 345 350
 Asp Gln Asp Ile Asn Leu Ser Lys Leu Met Asp Val Pro Gln Ala Asp
 355 360 365

Arg Val Gln Val Thr Ser Glu Gln Tyr Glu Leu Tyr Cys Glu Met Gly
 370 375 380
 Thr Thr Phe Glu Leu Cys Lys Ile Cys Asp Asp Asn Glu Lys Asn Ile
 385 390 395 400
 Lys Ile Glu Pro Cys Gly His Leu Leu Cys Ala Lys Cys Leu Ala Asn
 405 410 415
 Trp Gln Asp Ser Asp Gly Gly Gly Asn Thr Cys Pro Phe Cys Arg Tyr
 420 425 430
 Glu Ile Lys Gly Thr Asn Arg Val Ile Ile Asp Arg Phe Lys Pro Thr
 435 440 445
 Pro Val Glu Ile Glu Lys Ala Lys Asn Val Ala Ala Glu Lys Lys
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 Leu Ile Ser Leu Val Pro Asp Val Pro Pro Arg Thr Tyr Val Ser Gln
 465 470 475 480
 Cys Ser Gln Ser Leu Leu His Asp Ala Ser Asn Ser Ile Pro Ser Val
 485 490 495
 Asp Glu Leu Pro Leu Val Pro Pro Pro Leu Pro Pro Lys Ala Leu Gly
 500 505 510
 Thr Leu Asp Thr Leu Asn Ser Ser Gln Thr Ser Ser Ser Tyr Val Asn
 515 520 525
 Ile Lys Glu Leu Glu Asn Val Glu Thr Ser Gly Glu Ala Leu Ala Gln
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